DOCUMENT RESUME

ED 155 189 TM 007 069

AUTHOR Coker, Homer; Lorentz, Jeffrey L.
TITLE Growth in Reading as a Correlate of Student Classroom Behavior.
PUB DATE Dec 76
NOTE 26p.; Paper presented at the Annual Meeting of the National Reading Conference (26th, Atlanta, Georgia, December 5-7, 1976); For related document, see TM 007 070

EDRS PRICE MF-$0.83 HC-$2.06 Plus Postage.
DESCRIPTORS *Adjustment (to Environment); Age Differences; Classroom Environment; Classroom Observation Techniques; Elementary Education; *Predictor Variables; *Reading Achievement; *Reading Comprehension; Socioeconomic Influences; Statistical Data; *Student Adjustment; *Student Behavior
IDENTIFIERS Coping Analysis Schedule for Educational Settings; Iowa Tests of Basic Skills

ABSTRACT

Systematic classroom observation instruments were used to study the relationship between student coping style and student growth in reading. Classrom behaviors were recorded in the fall and the following spring with the Coping Analysis Schedule for Educational Settings (CASES). Data were analyzed separately for two types of classroom setings: either teacher directed settings (class as a group) or program directed settings (individual tasks). Multiple regression analyses identified those variables which contributed most to the prediction of reading achievement in the spring. In addition to grade level, previous reading achievement, and sociceconomic level, these variables included particular coping behaviors: Other-directed, and Compliant behaviors in teacher-directed settings; and low Peer-Dependent, high Inner-directed Task-cried, low Passive withdrawn, and low Inappropriately Self-directed behaviors in program directed settings. (CTM)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED155189

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Jeffrey L. Lorentz

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC) AND USERS OF THE ERIC SYSTEM."

GROWTH IN READING AS A CORRELATE OF STUDENT CLASSROOM BEHAVIOR

Homer Coker, Ph.D.

Jeffrey L. Lorentz, Ed.D.

West Georgia College

A Paper presented at the 26th Annual Meeting, National Reading Conference. December 5-7, 1976, Atlanta, Georgia.

TM007 069

In an earlier study (Coker and Lorentz, 1975) the investigators reported significant relationships between classroom mean student Coping Style, teacher control and Reading achievement. The present paper is a further examination of data collected as part of the Carroll County, Georgia, Competency Based Teacher Certification (CBTC) Project. In this Project, data were collected on more than 1800 students in 60 classrooms (grades 1 - 12) during the 1974-75 school year, and one more than 1300 students in 43 classrooms during the 1975-76 school year. It is the purpose of the present study to examine the relationships between observed classroom behavior, specifically student Coping Style and student growth in Reading. In the present study, data at the level of the individual student will be analyzed.

METHOD

Subjects

The subjects of the present study, 27 classroom teachers, Grades 3-8, are a subset of the population of 60 teachers who participated in the CBTC Project during the 1974-75 school year. The 60 teachers were volunteers, and all grade levels and most subject areas were represented. Only those teachers who taught Reading as a major subject are included in the sample selected for the present study.

Measures

The Iowa Tests of Basic Skills, Form 5 and 6, Levels Edition (ITBS) (A. N. Hieronymus and E. F. Lindquist, 1971) was given to all students in grades 3 through 7 who were involved in the CBTC Project. The Reading Comprehension subtest only was used in the present study. The reported reliability and validity for the ITBS are adequate for use in the present study. In addition, the State of Georgia makes use of the ITBS Battery in the 4th and 8th grades in the state-wide testing program.

The Coping Analysis Schedule for Educational Settings (CASES), (Spaulding, 1970) is a category system designed to measure pupil socialization and consists of 19 categories of student "coping" behaviors which are identified by descriptive statements such as "Aggressive Behavior," "Self-Directed Activity," "Observing Passively," etc. The CASES categories are arranged with the more active coping categories grouped at one end and the more passive categories at the other, but the numbers do not represent a scale. CASES has been developed over a ten year period as a result of more than 1,000 case studies in ongoing public school classrooms and other educational settings. Relationships between CASES and student achievement have been established in a number of recent studies.

Socioeconomic Status. An estimate of the socioeconomic status (SES) was obtained for each student based upon the occupation of the father (or the mother if she were the family's sole support). This occupational information was transformed to a 1-8 scale (1=high status, 8=low status) using a modified version of Warner, Meeker and Eells (1960) classification of occupations and levels. As an estimate of the reliability of the assignment of SES, two raters independently assigned SES scores to a small (N=77) sample of students using the procedure described above. The resulting intraclass r was .94. Students with missing SES were assigned the mean for their classroom, rounded to the nearest whole number.

Procedures

Data collection. The pretests were administered early in the Fall of 1974 in the classrooms of the 27 Carroll County teachers, and posttests administered again in the classrooms of the same 27 teachers--all of whom were still with the project in May, 1975. A group of specially-trained testers administered the tests in each classroom.

After the pretests had been administered, each of the approximately 600 students in the 27 classes was observed using the CASES instrument. This task was completed in three weeks. Each child's record was scored to identify his Coping Style. At the end of the year, two observations were again recorded on every student in the 27 classrooms.

All CASES observations were made by experienced classroom teachers who had been employed full-time by the CBTC Project as observers and been especially trained by the author of CASES, Dr. Robert Spaulding. Observer agreement studies, conducted in non-project classrooms, confirmed that the observers were consistently able to maintain agreement of 80 percent or better.

Scoring. Tests were hand or machine scored, keypunched and verified. Observation data were keypunched from the data collection forms and verified. All data processing was performed at West Georgia College's Computer Center.

ITBS scores were converted from raw scores to Standard Scores using the published Standard Score Tables (Houghton Mifflin, 1973). These scores use a normalized standard score scale with a mean of 80 and a standard deviation of 20 for the entire grade range, 3-8, combined. These scores were used to permit the use of all grade 3-8 data in a single analysis.

CASES frequencies for each student were scored using Spaulding's procedure (Spaulding, personal communication) to identify eight Coping Styles for each student as follows:

Style	Description
A	Aggressive, Manipulative
B	Inappropriately Self-directed
C	Passive, withdrawn
D	Peer Dependent
E	Compliant
F	Social, productive
G	Inner-directed, Task-oriented
H	Other-directed, Task-oriented
Overall	Composite of A - H

The CASES Coping Style scores for an individual student represent a dynamically-interrelated scale on which a predominant (i.e., highest) score in one or more styles is accompanied by low scores in the other styles. When a predominant Coping Style changes, another coping style will generally errupt as predominant. The Coping Style scores are weighted so that a score greater than one reflects student behavior that is called "visible,"

When CASES observations were made, observers distinguished two types of classroom settings: Teacher Directed (TD) and Program Directed (PD).

A Teacher Directed setting is one in which the teacher is generally in charge of the group as a central, directing figure. A Program Directed setting is one in which the teacher is not central but rather, the students are generally working on their own in individual tasks (workbooks, etc.). There is evidence from Spaulding's studies and from an unpublished CBTC Project correlational study (1974) that changes in the classroom setting resulted in changes in the student's CASES scores. Scores were therefore obtained for students for the appropriate setting by combining data from both Fall visits only when collected in the same setting. The same procedure was followed for the CASES data collected in Spring visits. Thus for one student, one or two sets of pre-CASES scores could be obtained (e.g.: both observations occurred in TD Setting; both occurred in PD Setting; one occurred in PD Setting and one occurred in TD Setting), and one or two sets of post-CASES scores obtained.

Data Reduction. Students were sorted into two sub-samples (TD and PD) for analysis. A student was included in the sub-sample only if Fall and Spring Reading scores as well as Fall and Spring Coping Style scores, along with SES, were available. If any of these variables were missing the student was dropped from the sub-sample. A student could be included in both TD and PD groups (with identical test scores) if Coping Style scores had been recorded for that student in both settings in both the Fall and Spring.

Changes in student Coping Style were computed in two ways. First, the difference between each of the Fall Coping Style scores and its corresponding Spring score was obtained as a measure of absolute change within each style. Second, an index of the relative change in predominant Coping Style was obtained for each student. Since the change in predominant style may either be from one of the eight styles to another of the eight styles, or to the same style (i.e., the style remains the same), the change may be reflected as a category or cell in an 8 x 8 matrix, as in Figure 1.

Categories

Fall Style	A	B	C	D	E	F	G	H
A	1	9	17	25	33	41	49	57
B	2	10	18	26	34	42	50	58
C	3	11	19	27	35	43	51	59
D	4	12	20	28	36	44	52	60
E	5	13	21	29	37	45	53	61
F	6	14	22	30	38	46	54	62
G	7	15	23	31	39	47	55	63
H	8	16	24	32	40	48	56	64

Spring Style

Figure 1

64 Categories Representing Changes

in Coping Style from Fall to Spring

Each of these 64 cells can be "scored" for each student by assigning an arbitrary value (i.e., one) to the cell representing the combination of Fall and Spring predominant Coping Styles and some other value (i.e., zero) to all the other cells. For example, a student with a predominant Fall Style A and a predominant Spring Style D would be assigned a score of one for variable 25 and zeroes for all of the other variables. This procedure is known as "Dummy Variable" coding (Draper and Smith, pp. 134-135) and is a useful technique in regression analysis. Students with tied Fall or Spring predominant Coping Styles were dropped from the analysis.

The final sub-samples contained 342 students in the TD group and 233 in the PD group. Means and standard deviations of Grade, SES, Reading Achievement and CASES scores for the Teacher Directed and Program Directed samples are shown in Table 1.

INSERT TABLE 1 HERE

In general, the TD sample and PD sample reflect somewhat different characteristics. The mean achievement of the TD sample is five to six points higher than that of the PD sample while the mean grade levels are about the same. Since the groups were divided on the basis of CASES data and some students may appear with the same test scores in both groups this is simply due to sampling error and not a result of classroom setting.

Differences in Coping Styles, which appear in the TD and PD samples, however, may in fact be a function of the setting since different CASES scores were recorded in the two settings, even for the same student. The biggest differences between groups appears in Styles G (Inner-directed, task oriented) and H (Other Directed, task oriented). The Teacher Directed group exhibits a much higher Style H score, while the Program Directed group exhibits a higher Style G score. These two styles are the only "visible" means for the groups.

A frequency distribution of student by predominant Fall and Spring Coping Styles is presented in Table 2.

INSERT TABLE 2 HERE

Regression Analyses. In order to examine the relationships between the CASES Styles and Reading Achievement, a series of multiple regression analyses were carried out using the Biomedical stepwise multiple regression program BMD02R (Dixon, 1974). The dependent variable was always Reading posttest and the independent variables were always permitted to enter the equation in the order in which they accounted for additional proportions of the variance.

Four pairs of analyses of the TD and PD samples, used Fall Reading, Grade, SES, and the Coping Styles as independent variables. Fall Coping Styles were entered in one set of analyses, Spring Coping Styles were entered in another; Change from Fall to

Spring Coping Styles were entered in a third set of analyses, and in the fourth, the Fall, Spring and Changes were all entered.

One additional pair of analyses used Fall Reading, Grade, SES and the 64 dummy variables as independent variables.

RESULTS

The first six predictors of Spring Reading Achievement from the eight analyses in which Student Coping Style scores were used as dependent variables are shown in Table 3.

INSERT TABLE 3 HERE

The first fifteen predictors of Spring Reading Achievement from the analyses using dummy coded dependent variables are shown in Table 4.

INSERT TABLE 4 HERE

The stepwise procedure will, if permitted, allow more variables to enter the equation than are statistically significant. If the number of independent variables is small in relation to the number of subjects, all the variables may enter the equation. The task of selecting the best equation from the many resulting from the stepwise procedures generally requires some personal judgment (Draper & Smith, p. 163). An examination of the summary tables revealed very little improvement in multiple R resulted from the addition of the sixth and subsequent Coping Style score and the eleventh and subsequent dummy variable. Thus, a somewhat arbitrary limit of 5 variables was used as an "optimum" number for inclusion in the equations using Coping Styles and a 10-variable limit for the Dummy variable equations. These 5 variable equations and ANOVAs are presented in Tables 5 through 20. The ANOVAs reveal

INSERT TABLES 5-20 HERE

that each of the equations is a significant ($p>.0001$) predictor of Reading achievement.

The 10-variable equations and ANOVAs are presented in Tables 21 through 24. These also are significant ($p>.0001$) predictors of

INSERT TABLES 21-24 HERE

Reading achievement.

DISCUSSION

It is apparent, of course, that the best predictors of Spring Reading achievement are Fall Reading achievement and grade level. Together these account for almost half of the variance in individual achievement. Even higher zero-order pretest-posttest correlations are reported in the literature. The span of grade levels from third to seventh along with a relatively small sample may be responsible for the correlations smaller than expected. The positive grade level-posttest correlation is due in part to the Standard Score norming procedures and was also expected to occur.

Note that the negative B-values associated with SES are due to the scale (1=high SES, 8=low SES).

With the major contribution of Fall Reading achievement and grade level to the variance in Spring Reading achievement recognized and accounted for, the contribution of other variables will be examined below.

In the Teacher Directed Setting sample, both Fall and Spring Other-directed, Task-oriented (Style H) and Fall and Spring Compliant (Style E) behaviors emerged in two analyses as significant ($p<.05$) predictors of Spring Reading achievement.

In the Program Directed Setting sample, however, different behaviors appeared as significant ($p<.05$) predictors. Low Peer Dependent (Style D) and high Inner-directed, Task-oriented (Style G) behaviors along with SES were significant predictors of the Fall styles. Of the Spring styles, low Passive, Withdrawn (Style C) behavior and low Inappropriately Self-directed (Style B) behavior both appeared as significant predictors. A decrease in Style D from Fall to Spring and an increase in Style C from Fall to Spring were both also significantly related to Spring Reading achievement.

No additional Coping Styles or changes in Coping Styles were significant predictors of Reading achievement. The significant predictors including Fall Reading and grade level, all accounted for about 43% (TD Setting) and 56% (PD Setting) of the variance in Spring Reading achievement.

The dummy variable analysis revealed that the students who remained Passive, Withdrawn (Style C) in the TD sample were least likely to gain in Reading. In the PD sample, those students who moved from Peer Dependent (Style D) to Inappropriately Self-directed (Style B) were least likely to gain in Reading.

Other types of students in the Teacher Directed setting who are least likely to gain in Reading are those: who move from Inappropriately Self-directed to Other-directed, Task-oriented (B-H); who remain Peer Dependent (B-D); and who move from Inner-directed; Task-oriented to Other-directed, Task-oriented (G-H).

Students in Program Directed setting who are likely to gain least in Reading are those: who move from Inner-directed, Task-oriented to Passive, Withdrawn (B-C); who remain Peer Dependent (D-D); and who remain Passive, Withdrawn (C-C). Those in the PD setting who are likely to gain most in Reading are those: who move from Other-directed, Task-oriented to Social, Productive (H-F); who reverse this pattern (F-H); and who move from Social, Productive to Peer Dependent (F-D).

Other dummy variables entered the equations, but none were significant. The significant dummy variables, along with Fall Reading and grade level, accounted for 44% (TD Setting) and 58% (PD Setting) of the variance in Spring Reading achievement.

CONCLUSION

These findings are in general agreement with other studies and hold serious implications for classroom teachers. It is important to note that differences in classroom setting will interact with student behavior and that differences in student Coping Style will result in differences in achievement. Treatment schedules are available (Spaulding, 1970) which will assist the teacher in moving students from Aggressive (Style A) to Social, Productive (Style F). It may be as appropriate to address some energy to this domain as to the direct instruction in Reading.

TABLE 1

MEANS AND STANDARD DEVIATIONS

VARIABLE	TD Sample N = 342 Mean	TD Sample N = 342 SD	PD Sample N = 233 Mean	PD Sample N = 233 SD
Grade	5.51	1.30	5.09	1.37
SES	4.79	1.48	4.77	1.49
Fall Reading	74.16	17.02	67.84	19.37
Spring Reading	75.78	18.75	70.14	21.60
Fall CASES				
A	0.07	0.38	0.08	0.33
B	0.51	0.66	0.37	0.60
C	0.25	0.83	0.08	0.30
D	0.52	0.49	0.51	0.49
E	0.44	0.65	0.51	0.57
F	0.07	0.22	0.23	0.39
G	0.24	0.37	1.21	0.78
H	1.88	0.75	0.77	0.77
Spring CASES				
A	0.15	0.86	0.19	0.69
B	0.49	0.58	0.41	0.62
C	0.51	1.67	0.22	0.86
D	0.51	0.46	0.52	0.54
E	0.44	0.52	0.32	0.62
F	0.05	0.13	0.39	0.73
G	0.16	0.26	1.00	0.81
H	1.97	0.67	0.95	0.80
Change - Fall to Spring				
A	- 0.07	0.94	- 0.11	0.74
B	0.02	0.76	- 0.04	0.77
C	- 0.25	1.79	- 0.15	0.92
D	0.00	0.63	- 0.01	0.68
E	0.01	0.77	0.18	0.75
F	0.02	0.25	- 0.17	0.79
G	0.09	0.45	0.21	1.04
H	- 0.09	0.93	- 0.18	1.06

TABLE 2

FREQUENCY OF PREDOMINANT COPING

STYLE, FALL & SPRING

Fall Coping Style	Setting	Spring Coping Style A	B	C	D	E	F	G	H
A	TD								2
	PD	1						1	
B	TD	1	4	1	1	1			31
	PD	3	3	1	1	1		5	3
C	TD		1	2	1				7
	PD				1				1
D	TD		3	1	2	1			8
	PD	1	1		2		1	5	4
E	TD		1			2			17
	PD				1	2	5	7	6
F	TD		2						1
	PD				2		3	2	1
G	TD	1	1		1				7
	PD	4	11	7	6	2	10	40	38
H	TD	4	16	18	10	13		2	179
	PD	2	5		3		5	15	21

TABLE 3

FIRST SIX PREDICTORS OF SPRING READING ACHIEVEMENT USING STUDENT COPING STYLES

CASES Styles Used	Setting	Variable	Multiple R	RSQ	F to ENTER	PROB>F
Fall only	TD	Fall Reading	.62	.38	213.02	.0000
		Grade	.64	.41	14.90	.0002
		Fall H	.64	.42	2.84	.0929
		SES	.65	.42	2.41	.1215
		Fall C	.65	.42	1.12	.2907
		Fall B	.65	.42	.84	.3601
	PD	Fall Reading	.67	.45	185.57	.0000
		Grade	.70	.48	17.56	.0000
		Fall D	.73	.53	21.74	.0000
		SES	.73	.54	3.69	.0560
		Fall G	.74	.55	4.08	.0446
		Fall C	.74	.55	1.13	.2889
Spring only	TD	Fall Reading	.62	.38	213.03	.0000
		Grade	.64	.41	14.90	.0002
		Spring H	.65	.42	3.78	.0526
		Spring E	.65	.43	5.05	.0253
		SES	.66	.43	2.41	.1215
		Spring G	.66	.43	0.84	.3601
	PD	Fall Reading	.67	.45	185.57	.0000
		Grade	.70	.48	17.56	.0000
		Spring C	.71	.50	6.35	.0124
		Spring B	.71	.51	4.03	.0459
		Spring F	.72	.52	3.57	.0601
		SES	.72	.52	1.48	.2250

TABLE 3 (continued)

CASES Styles Used	Setting	Variable	Multiple R	RSQ	F to ENTER	PROB>F
Change Fall to Spring	TD	Fall Reading	.62	.38	213.02	.0000
		Grade	.64	.41	14.90	.0002
		SES	.64	.42	2.38	.1238
		Change in A	.65	.42	1.36	.2443
		Change in D	.65	.42	1.29	.2569
		Change in F	.65	.42	0.91	.3401
	PD	Fall Reading	.67	.45	185.57	.0000
		Grade	.70	.48	17.56	.0000
		Change in D	.74	.50	5.37	.0214
		Change in C	.72	.51	8.10	.0048
		SES	.72	.52	2.20	.1394
		Change in E	.72	.52	2.20	.1394
Fall, Spring and Changes	TD	Fall Reading	.62	.38	213.02	.0000
		Grade	.64	.41	14.90	.0002
		Fall H	.65	.42	3.78	.0526
		Fall E	.65	.43	5.05	.0253
		SES	.66	.43	2.41	.1215
		Change in B	.66	.43	1.74	.1880
	PD	Fall Reading	.67	.45	185.57	.0000
		Grade	.70	.48	17.56	.0000
		Fall D	.73	.53	21.74	.0000
		Change in C	.74	.55	8.72	.0035
		Fall G	.75	.56	4.20	.0416
		SES	.75	.56	3.63	.0580

TABLE 4

FIRST FIFTEEN PREDICTORS OF SPRING READING ACHIEVEMENT USING DUMMY CODED VARIABLES TO REPRESENT PREDOMINANT COPING STYLES

VARIABLE	MULTIPLE R	MULTIPLE RSQ	F TO ENTER	PROB>F
Teacher Directed Setting				
Fall Reading	.62	.38	213.02	.0000
Grade	.64	.41	14.90	.0002
SES	.64	.42	2.38	.1238
C-C	.65	.42	3.49	.0626
B-H	.65	.43	3.58	.0593
D-D	.66	.43	3.77	.0530
G-H	.66	.44	3.64	.0573
H-E	.67	.44	2.41	.1215
H-B	.67	.45	1.72	.1907
H-C	.67	.45	1.86	.1736
H-A	.67	.45	1.90	.1690
D-B	.67	.46	1.61	.2054
C-H	.68	.46	1.12	.2907
E-B	.68	.46	0.82	.3658
G-D	.68	.46	0.73	.3935
Program Directed Setting				
Fall Reading	.67	.45	185.57	.0000
Grade	.70	.48	17.56	.0000
D-B	.71	.51	9.71	.0021
G-C	.72	.52	8.36	.0042
H-F	.73	.54	8.01	.0051
F-H	.74	.55	7.61	.0063
D-D	.75	.57	6.10	.0143
C-C	.76	.57	3.84	.0513
F-D	.76	.58	4.10	.0441
SES	.77	.59	2.62	.1069
B-H	.77	.59	2.42	.1212
H-B	.77	.59	2.25	.1350
D-H	.77	.60	2.16	.1431
D-F	.78	.60	2.13	.1459
F-G	.79	.61	1.46	.2282

TABLE 5

5-VARIABLE MULTIPLE REGRESSION EQUATION
PREDICTING SPRING READING ACHIEVEMENT
USING FALL COPING STYLES
TEACHER DIRECTED SETTING
MULTIPLE R = .65

VARIABLE	B-VALUE	STD. ERROR	F	PROB>F
Intercept	20.92			
Grade	3.13	0.76	16.82	.0000
SES	- 0.87	0.57	2.34	.1270
Fall Reading	0.53	0.06	80.36	.0000
Fall C	- 1.02	0.96	1.12	.2907
Fall H	1.57	1.06	2.18	.1408

TABLE 6

ANALYSIS OF VARIANCE FOR THE
MULTIPLE LINEAR REGRESSION

SOURCE	DF	SS	MS	F	PROB>F
Regression	5	50619.313	10123.859	49.075	.0000
Residual	336	69314.000	206.292		
Total	341	119933.313			

TABLE 7

5-VARIABLE MULTIPLE REGRESSION EQUATION
PREDICTING SPRING READING ACHIEVEMENT
USING FALL COPING STYLES
PROGRAM DIRECTED SETTING
MULTIPLE R = .74

VARIABLE	B-VALUE	STD. ERROR	F	PROB>F
Intercept	21.54			
Grade	5.25	0.99	27.87	.0000
SES	- 1.43	0.69	4.27	.0399
Fall Reading	0.44	0.07	35.33	.0000
Fall D	- 8.38	2.09	16.13	.0001
Fall G	2.67	1.32	4.09	.0443

TABLE 8

ANALYSIS OF VARIANCE FOR THE
MULTIPLE LINEAR REGRESSION

SOURCE	DF	SS	MS	F	PROB>F
Regression	5	59001.578	11800.313	54.414	.0000
Residual	227	49227.797	216.863		
Total	232	108229.375			

TABLE 9

5-VARIABLE MULTIPLE REGRESSION EQUATION
PREDICTING SPRING READING ACHIEVEMENT
USING SPRING COPING STYLES
TEACHER DIRECTED SETTING
MULTIPLE R = .66

VARIABLE	B-VALUE	STD. ERROR	F	PROB>F
Intercept	15.40			
Grade	3.05	0.75	16.54	.0001
SES	- 0.88	0.56	2.41	.1215
Fall Reading	0.55	0.06	87.90	.0000
Spring E	3.50	1.54	5.16	.0237
Spring H	2.83	1.18	5.69	.0176

TABLE 10

ANALYSIS OF VARIANCE FOR THE
MULTIPLE LINEAR REGRESSION

SOURCE	DF	SS	MS	F	PROB>F
Regression	5	51604.938	10320.984	50.753	.0000
Residual	336	68328.375	203.358		
Total	341	119933.313			

TABLE 11

5-VARIABLE MULTIPLE REGRESSION EQUATION
PREDICTING SPRING READING ACIEVEMENT
USING SPRING COPING STYLES
PROGRAM DIRECTED SETTING
MULTIPLE R = .72

VARIABLE	B-VALUE	STD. ERROR	F	PROB>F
Intercept	15.62			
Grade	4.51	1.00	20.39	.0000
Fall Reading	0.51	0.07	52.24	.0000
Spring B	- 3.74	1.64	5.24	.0229
Spring C	- 3.09	1.17	6.96	.0089
Spring F	- 2.64	1.39	3.57	.0601

TABLE 12

ANALYSIS OF VARIANCE FOR THE
MULTIPLE LINEAR REGRESSION

SOURCE	DF	SS	MS	F	PROB>F
Regression	5	55743.250	11148.648	48.217	.0000
Residual	227	52486.125	231.216		
Total	232	108229.375			

TABLE 13

5-VARIABLE MULTIPLE REGRESSION EQUATION
PREDICTING SPRING READING ACHIEVEMENT
USING CHANGE IN COPING STYLES
TEACHER DIRECTED SETTING
MULTIPLE R = .65

VARIABLE	B-VALUE	STD. ERROR	F	PROB>F
Intercept	23.42			
Grade	3.09	0.75	16.83	.0001
SES	- 0.93	0.57	2.64	.1051
Fall Reading	0.54	0.06	83.50	.0000
Change in A	0.99	0.83	1.43	.2326
Change in D	1.42	1.25	1.29	.2569

TABLE 14

ANALYSIS OF VARIANCE FOR THE
MULTIPLE LINEAR REGRESSION

SOURCE	DF	SS	MS	F	PROB>F
Regression	5	50345.188	10069.035	48.617	.0000
Residual	336	69588.125	207.108		
Total	341	119933.313			

TABLE 15

5-VARIABLE MULTIPLE REGRESSION EQUATION
PREDICTING SPRING READING ACHIEVEMENT
USING CHANGE IN COPING STYLES
PROGRAM DIRECTED SETTING
MULTIPLE R = .72

VARIABLE	B-VALUE	STD. ERROR	F	PROB>F
Intercept	17.40			
Grade	4.62	1.01	20.81	.0000
SES	- 1.06	0.71	2.20	.1394
Fall Reading	0.51	0.07	46.56	.0000
Change in C	3.04	1.10	7.58	.0064
Change in D	- 4.43	1.50	8.75	.0034

TABLE 16

ANALYSIS OF VARIANCE FOR THE
MULTIPLE LINEAR REGRESSION

SOURCE	DF	SS	MS	F	PROB>F
Regression	5	56123.438	11224.688	48.900	.0000
Residual	227	52105.938	229.542		
Total	232	108229.376			

TABLE 17

10-VARIABLE MULTIPLE REGRESSION EQUATION
PREDICTING SPRING READING ACHIEVEMENT
USING FALL, SPRING, & CHANGE IN COPING
STYLES TEACHER DIRECTED SETTING
MULTIPLE R = .66

VARIABLE	B-VALUE	STD. ERROR	F	PROB>F
Intercept	13.20			
Grade	3.26	0.76	18.25	.0000
SES	- 0.86	0.57	2.26	.1337
Fall Reading	0.54	0.06	84.82	.0000
Fall C	- 0.88	0.96	0.85	.3572
Spring A	- 0.73	0.96	0.58	.4469
Spring E	3.41	1.59	4.60	.0327
Spring G	3.14	3.24	0.94	.3329
Spring H	- 3.37	1.41	5.73	.0172
Change in B	- 1.45	1.10	1.72	.1906
Change in F	2.43	3.10	0.61	.4353

TABLE 18

ANALYSIS OF VARIANCE FOR THE
MULTIPLE LINEAR REGRESSION

SOURCE	DF	SS	MS	F	PROB>F
Regression	10	52603.125	5260.313	25.860	.0000
Residual	331	67330.188	203.414		
Total	341	119933.313			

TABLE 19

10-VARIABLE MULTIPLE REGRESSION EQUATION PREDICTING SPRING READING ACHIEVEMENT USING FALL, SPRING, & CHANGE IN COPING STYLES PROGRAM DIRECTED SETTING
MULTIPLE R = .76

VARIABLE	B-VALUE	STD. ERROR	F	PROB>F
Intercept	23.59			
Grade	5.30	0.99	28.76	.0000
SES	- 1.32	0.68	3.78	.0531
Fall Reading	0.40	0.07	29.79	.0000
Fall D	- 9.84	2.10	21.98	.0000
Fall G	4.07	1.75	5.43	.0207
Spring A	1.63	1.41	1.35	.2465
Spring F	- 1.67	1.32	1.61	.2058
Change in C	2.90	1.06	7.40	.0070
Change in E	- 2.46	1.35	3.34	.0689
Change in G	- 1.61	1.29	1.55	.2144

TABLE 20

ANALYSIS OF VARIANCE FOR THE MULTIPLE LINEAR REGRESSION

SOURCE	DF	SS	MS	F	PROB>F
Regression	10	62439.258	6243.926	30.272	.0000
Residual	222	45790.117	206.262		
Total	232	108229.375			

TABLE 21

10-VARIABLE MULTIPLE REGRESSION EQUATION
PREDICTING SPRING READING ACHIEVEMENT
USING DUMMY CODED COPING STYLES
TEACHER DIRECTED SETTING
MULTIPLE R = .67

VARIABLE	B-VALUE	STD. ERROR	F	PROB>F
Intercept	23.64			
Grade	2.92	0.74	15.43	.0001
SES	- 0.85	0.57	2.24	.1354
H - B	- 5.10	3.64	1.96	.1624
C - C	-19.89	10.04	3.93	.0483
H - C	- 4.73	3.47	1.85	.1747
D - D	-20.18	10.03	4.04	..0452
H - E	5.78	4.08	2.00	.1582
B - H	- 5.85	2.72	4.63	.0321
G - H	-10.60	5.49	3.73	.0543
Fall Reading	0.56	0.06	90.87	.0000

TABLE 22

ANALYSIS OF VARIANCE FOR THE
MULTIPLE LINEAR REGRESSION

SOURCE	DF	S	MS	F	PROB>F
Regression	10	53937.125	5393.711	27.052	.0000
Residual	331	65996.188	199.384		
Total	341	119933.313			

TABLE 23

10-VARIABLE MULTIPLE REGRESSION EQUATION
PREDICTING SPRING READING ACHIEVEMENT
USING DUMMY CODED COPING STYLES
PROGRAM DIRECTED SETTING
MULTIPLE R = .76

VARIABLE	B-VALUE	STD. ERROR	F	PROB>F
Intercept	21.76			
Grade	5.01	0.96	27.49	.0000
SES	- 1.11	0.68	2.62	.1069
D - B	-45.47	14.43	9.93	.0018
G - C	-17.44	5.49	10.10	.0017
C - D	-29.44	14.43	4.16	.0426
D - D	-27.44	10.16	7.30	.0074
F - D	-21.59	10.25	4.44	.0362
H - F	-19.44	6.44	9.10	.0029
F - H	-45.27	14.43	9.84	.0019
Fall Reading	0.44	0.07	37.43	.0000

TABLE 24

ANALYSIS OF VARIANCE FOR THE
MULTIPLE LINEAR REGRESSION

SOURCE	DF	SS	MS	F	PROB>F
Regression	10	63449.836	6344.980	31.456	.0000
Residual	222	44779.539	201.710		
Total	232	108229.375			

REFERENCES

Coker, H. and J. L. Lorentz. "An Examination of Student Coping Style, Teacher Control and Student Achievement in Reading." A paper presented at the 25th Annual Meeting, National Reading Conference, St. Petersburg, Florida, 1975.

Dixon, W. J. (Ed.) Biomedical Computer Programs(3rd Ed.). Berkeley: University of California Press, 1974.

Draper, N. R. and H. Smith. Applied Regression Analysis. New York: John Wiley & Sons, Inc., 1966.

Hieronymus, A. N., & Lindquist, E. F. Iowa Tests of Basic Skills. Boston: Houghton Mifflin Company 1971.

Iowa Tests of Basic Skills Forms 5 and 6, Age Equivalent/Standard Score Tables. Boston: Houghton Mifflin Company, 1973.

Spaulding, R. L. Classroom Behavior Analysis and Treatment, San Jose: Author, 1970.

Warner, W. L., Meeker, M., & Eells, K. Social Class in America, New York: Harper, 1960.